GAUTENG PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

PROVINCIAL EXAMINATION

PROVINSIALE EKSAMEN

NOVEMBER 2023

GRADE/*GRAAD* 9

MARKING GUIDELINES/

NASIENRIGLYNE

MATHEMATICS/*WISKUNDE*

PAPER/*VRAESTEL* 1

EXEMPLAR

9 pages/*bladsye*

SECTION/*AFDELING* A

QUESTION/*VRAAG* 1

1.1	1.2	1.3	1.4	1.5
A ✓	C ✓	D ✓	C ✓	B ✓

[5]

SECTION/*AFDELING* B

QUESTION/*VRAAG* 2

2.1	2.1.1	8 ✓**A**	1 mark for the HCF *1 punt vir GGF*	(1)
	2.1.2	$16m^2n$ ✓**A**	1 mark for the LCM *1 punt vir KGV*	(1)
2.2	2.2.1	20% × 3 000 ✓**M** = 600 = 3 000 − 600 = R2 400 ✓ **CA** **OR/*OF*** R2 400 ✓✓**A** **OR/*OF*** 80% × 3 000 ✓**M** = R2 400 ✓**CA**	1 mark for multiplying with 20% *1 punt vir vermenigvuldig met 20%* 1 mark for the answer *1 punt vir antwoord* Answer ONLY, full marks *SLEGS antwoord, volpunte*	(2)
	2.2.2	$\frac{3}{4}$ × 3 000 ✓**M** = R2 250 ✓**CA** **OR/*OF*** 75% × 3 000 ✓**M** = R2 250 ✓**CA**	1 mark for multiplying with $\frac{3}{4}$ *1 punt vir vermenigvuldig met* $\frac{3}{4}$ 1 mark for the answer *1 punt vir antwoord* Answer ONLY full marks *SLEGS antwoord, volpunte*	(2)

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2.3	$1 : 4{,}47$ $= \frac{18356{,}26}{4{,}47}$ ✓**M** $= 4\,106{,}55$ ✓C**A** **OR/*OF*** $4{,}47x = 18\,356{,}26$ ✓**M** $x = \frac{18\,356{,}26}{4{,}47}$ $x = 4\,106{,}55$ ✓C**A**		1 mark for division *1 punt vir deling* 1 mark for the final answer *1 punt vir finale antwoord* **OR/*OF*** 2 marks if a table or number line is used to get answer *2 punte as tabel of getallyn gebruik is om antwoord te verkry* **OR/*OF*** **Consider alternative mathematically correct responses which lead to the correct answer./*Oorweeg alternatiewe wiskundig korrekte response wat tot die korrekte antwoord lei.***	(2)
2.4	2.4.1	Deposit/*Deposito* = 10% of R33 100 = R3 310 Balance/*Balans* = R33 100 – R3 310 = R29 790 ✓**M** A = P(1 + in) $= 29\,790(1 + 0{,}11 \times 3)$ ✓**M** = R39 620,70 Kgabo will pay:/*Kgabo sal betaal:* 39 620,70 + 3 310 = R42 930,70✓C**A**	1 mark for R29 790 *1 punt vir* R29 790 1 mark for substitution *1 punt vir vervanging* 1 mark for answer A = *1 punt vir antwoord A =*	(3)
	2.4.2	39 620,70 − 29 790 ✓**M** = R9 830,70✓C**A**	1 mark for 39 620,70 − 29 790 *1 punt vir* 39 620,70 − 29 790 1 mark for answer *1 punt vir antwoord* **Answer ONLY, full marks** ***SLEGS antwoord, volpunte***	(2)
2.5	$A = P\left(1 + \frac{r}{100}\right)^n$ $A = 2\,500\left(1 + \frac{7{,}5}{100}\right)^5$ ✓**M** $A = 2\,500(1 + 0{,}075)^5$ $A =$ R3 589,07✓C**A** **OR/*OF*** $i = \frac{7{,}5}{100} = 0{,}075$ $A = P(1 + i)^n$ $A = 2\,500(1 + 0{,}075)^5$ ✓**M** $A =$ R3 589,07✓C**A**		1 mark for substitution in formula *1 punt vir vervanging in formule* 1 mark for answer *1 punt vir antwoord*	(2)
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QUESTION/*VRAAG* 3

3.1	$-\frac{1}{24}$ ✓**A**		1 mark for answer *1 punt vir antwoord*	(1)
3.2	3.2.1	$\sqrt{36} + \sqrt[3]{-216} + (-1)(-2)$ $= 6 - 6 + 2$ ✓✓**M** $= 2$ ✓**A**	1 mark for -6 *1 punt vir* -6 1 mark for $6 - 6 + 2$ *1 punt vir* $6 - 6 + 2$ 1 mark for the correct answer *1 punt vir die korrekte antwoord* **Answer ONLY, no marks** ***SLEGS antwoord, geen punte nie***	(3)
	3.2.2	$-5 + (-8) - (4)(-3)$ $= -5 - 8 + 12$ ✓**M** $= -1$ ✓**A**	1 mark for 12 *1 punt vir 12* 1 mark for the correct answer *1 punt vir die korrekte antwoord* **Answer ONLY, no marks** ***SLEGS antwoord, geen punte nie***	(2)
3.3	$1\,312 - 1\,200 + 400$ ✓**M** $= 512$ ✓**A** **OR/*OF*** She has/*Sy het* R512 ✓✓**A**		1 mark for method *1 punt vir metode* 1 mark for answer *1 punt vir antwoord* **Answer ONLY, full marks** ***SLEGS antwoord, volpunte***	(2)
				[8]

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QUESTION/*VRAAG* 4

4.1	Exponents/*Eksponente* ✓**A**	1 mark for answer *1 punt vir antwoord*	(1)
4.2	4.2.1 $pq \times pq = pq^2$ $= p^2q^2$ ✓**A** 4.2.2 $(xy + xy)$ $= (xy)^2$ $= 2xy$ ✓**A** 4.2.3 $5^4 \times \frac{1}{5^{-3}} = 5^1$ $= 5^4 \times 5^3$ $= 5^7$ ✓**A**	1 mark for each correct answer *1 punt vir elke korrekte antwoord*	(3)
4.3	$\frac{8r^3 \,.\, 2(r^2)^4}{2^4 \,.\, (r^2)^5}$ $\frac{16r^3.r^8}{16r^{10}}$ ✓**M** $= r^{11-10}$ ✓C**A** $= r$ ✓**A** **OR/*OF*** $\frac{8r^3 \,.\, 2(r^2)^4}{2^4 \,.\, (r^2)^5}$ $= \frac{2^3r^3 \,.2r^8}{2^4r^{10}}$ ✓**M** $= 2^{4-4}r^{11-10}$ $= 2^0r^1$ ✓C**A** $= r$ ✓**A**	1 mark for removing the brackets *1 punt vir verwydering van die hakies* 1 mark for applying laws of exponents *1 punt vir toepassing van eksponensiële wette* 1 mark for answer *1 punt vir antwoord*	(3)
			[7]

QUESTION/*VRAAG* 5

5.1	27; 38 ✓**A**		1 mark for both terms *1 punt vir albei terme.*	(1)
5.2	5.2.1	67 cm ✓**A**	1 mark for the answer *1 punt vir die antwoord*	(1)
	5.2.2	55; 61; 67; 73; 79; 85; 91; 97;103; 109; 115; 121; 127; 133; 139; 145 ✓✓**A** There are 16 chairs. *Daar is 16 stoele.* ✓**A** **OR/*OF*** $d = 6$ $n = 1$: $T_1 = 6(1) + 49 = 55$ $n = 2$: $T_2 = 6(2) + 49 = 61$ $T_n = 6n + 49$ ✓**M** $145 = 6n + 49$ ✓**M** $6n = 96$ $n = 16$ ✓**A**	1 mark for the 1st 8 correct terms *1 punt vir 1ste 8 korrekte terme* 1 mark for the 2nd 8 correct terms *1 punt vir 2de 8 korrekte terme* 1 mark for answer *1 punt vir antwoord*	(3)

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5.3	5.3.1	T_n = (common difference/*algemene verskil)* (Input/*Insette*) – 7 **M** ✓**CA** **OR/*OF*** $T_n = 5n - 7$ ✓**M** ✓**CA**	2 marks for formula and answer *2 punte vir formule en antwoord*	(2)
	5.3.2	$T_n = 5n - 7$ $13 = 5n - 7$ ✓**M** $13 + 7 = 5n$ $20 = 5n$ $4 = n$ ✓**A** **OR/*OF*** Input/*Insette* –2 –1 0 4✓ ✓**A** Output/*Uitset* –17 –12 –7 13	1 mark for correct substitution *1 punt vir regte vervanging* 1 mark for answer *1 punt vir antwoord* **OR/*OF*** 2 marks for the right answer *2 punte vir die regte antwoord*	(2)
				[9]

QUESTION/*VRAAG* 6

6.1	Commutative *Kommutatiewe* ✓**A**	1 mark for answer *1 punt vir antwoord*	(1)
6.2	Five hundred and forty-seven million, two hundred and eighty-six thousand, three hundred and eighty/*Vyfhonderd sewe en veertig miljoen, tweehonderd ses en tagtig duisend drie honderd en tagtig*	1 mark for answer *1 punt vir antwoord*	(1)
6.3.	$3 + 2a^3$ ✓**A** **OR/*OF*** $12a^2 + 8a^5$ $= 4a^2(3 + 2a^3)$ ✓**A**	1 mark for $3 + 2a^3$ *1 punt vir* $3 + 2a^3$	(1)
6.4	$2r^2 - 8rs - 9s^2 + 7$ $2(1)^2 - 8(1)(-2) - 9(-2)^2 + 7$ ✓**M** $= 2(1) + 8(2) - 9(4) + 7$ $= 2 + 16 - 36 + 7$ ✓**CA** $= -11$ ✓**A**	1 mark for correct substitution *1 punt vir regte vervanging* 1 mark for removing the brackets *1 punt vir verwydering van hakies* 1 mark for the answer *1 punt vir antwoord*	(3)
6.5	6.5.1 $(15xy^2 - 27xyz - 3x^2yz^3) \div -3xy$ $= \frac{15xy^2}{-3xy} - \frac{27xyz}{-3xy} - \frac{3x^2yz^3}{-3xy}$ $= -5y + 9z + xz^3$ ✓✓✓ **CA**	1 mark for $-5y$ *1 punt vir* $-5y$ 1 mark for 9z *1 punt vir* 9z 1 mark for $+xz^3$ *1 punt vir* $+xz^3$	(3)

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	6.5.2	$\sqrt[3]{27y^6}$ $= 3y^2$ ✓✓**A**	1 mark for 3 *1 punt vir* 3 1 mark for y^2 *1 punt vir* y^2	(2)
				[11]

QUESTION/*VRAAG* 7

7.1	$4(2d + 6) = 32$ ✓**A**		1 mark for answer *1 punt vir antwoord*	(1)
7.2	Learner 1: $4x - 2x = 3 - 7$, is correct *Leerder 1:* $4x - 2x = 3 - 7$, *is korrek* ✓**A**		1 mark for answer *1 punt vir antwoord*	(1)
7.3	7.3.1	$x^2 - 2x - 3 = 0$ $(x - 3)(x + 1) = 0$ $(x - 3) = 0\ or/of\ (x + 1) = 0$ ✓**M** $x = 3$ or/*of* $x = -1$ ✓ **A**	1 mark for factorisation *1 punt vir faktorisering* 1 mark for both factors *1 punt vir beide faktore*	(2)
	7.3.2	$\frac{p-3}{4} - \frac{p-1}{3} = \frac{p}{2} - 1$ LCD/*KGD* =12 $3(p - 3) - 4(p - 1) = 6p - 12$ ✓**M** $3p - 9 - 4p + 4 = 6p - 12$ $-p - 5 = 6p - 12$ ✓ C**A** $-p - 6p = -12 + 5$ $-7p = -7$ $p = 1$ ✓ **A**	1 mark for LCD *1 punt vir KGD* 1 mark for removing brackets *1 punt vir verwydering van hakies* 1 mark for answer *1 punt vir antwoord*	(3)
7.4	Let Roy's travel time be x hours. Rose catches up with Roy after 5 hours. Rose's distance: $d = \frac{48\ km}{h} \times 5h$ $= 240\ km.$ ✓**M** They travel the same distance. Roy's travelling time $\frac{240}{40}$ ✓✓**M** = 6 hours. ✓**A** Roy travelled for 6 hours. *Laat Roy se ry-tyd x uur wees.* *Rose ry vir 5 uur om Roy in the haal.* *Rose se afstand:* $d = \frac{48\ km}{h} \times 5h$ $= 240\ km$ ✓**M** *Hulle ry dieselfde afstand.* *Roy se reistyd:* $t = \frac{240}{40}$ ✓✓**M** $= 6\ uur$ ✓**A** *Roy het 6 uur lank gery.*		1 mark for formula *1 punt vir formule* 1 mark for substitution *1 punt vir vervanging* 1 mark for solving the equation *1 punt vir oplos van die vergelyking* 1 for answer *1 punt vir antwoord*	

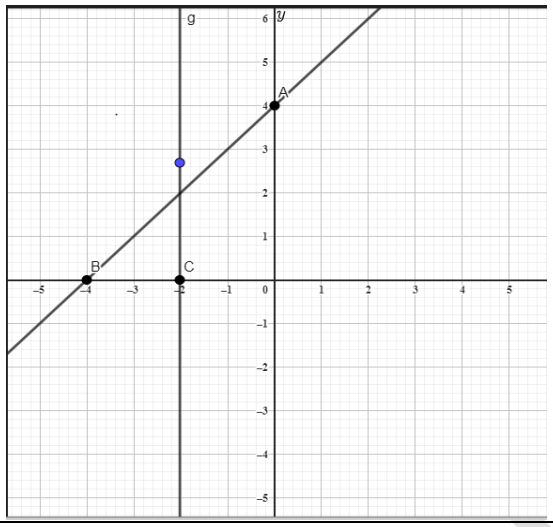
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	OR/*OF* Distance/*Afstand* $= 40 \times \text{time}/tyd$ ✓**M** $Rose = 48 \times 5$ ✓**M** $= 240\ km$ $40x = 240$ ✓**M** $x = 6\ h$ Roy travelled for 6 hours. *Roy ry vir 6 uur.* ✓**A** **OR/*OF*** Let *d* = Rose's distance = Roy's distance *Laat d = Rose se afstand = Roy se afstand* They travelled the same distance. *Hulle ry dieselfde afstand.* ✓**M** Rose: $d = 40km/h \times 5h$ Let $x =$ Roy's travelling time *Laat* $x =$ *Roy se reistyd* Roy: $d = 48\ km/h \times x$ ✓**M** $\frac{40\ km}{h} \times 5h = \frac{48\ km}{h} \times x$✓**M** $240\ km = 48x$ $x = 6h$ ✓**CA**	**Accept any correct reasoning or method to solve the problem.** ***Aanvaar enige logiese redenasie en korrekte metode om die probleem op te los.***	(4)
			[11]

QUESTION/*VRAAG* 8

8.1		**COLUMN A/ *KOLOM A***	**COLUMN B/ *KOLOM B***	1 mark for each answer *1 punt vir elke antwoord* (4)
		8.1.1	B ✓**A**	
		8.1.2	C ✓**A**	
		8.1.3	D ✓**A**	
		8.1.4	A ✓**A**	
8.2	8.2.1	B $(-4; 0)$ ✓**A**		1 mark for coordinates of B *1 punt vir koördinate van B* (1)
	8.2.2	$m = \frac{y_2 - y_1}{x_2 - x_1}$ ✓**M** $= \frac{4}{4}$ $= 1$ ✓**CA**		1 mark for the formula and substitution *1 punt vir formule en vervanging* 1 mark for answer *1 punt vir antwoord* (2)
	8.2.3	$y = x + 4$ ✓**A**		1 mark for correct equation *1 punt vir korrekte vergelyking* (1)

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	8.2.4	See the graph below./*Kyk na die grafiek hieronder.* ✓**A**  	1 mark for the correct graph *1 punt vir korrekte grafiek*	(1)
				[9]
				TOTAL: 75 ***TOTAAL: 75***

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